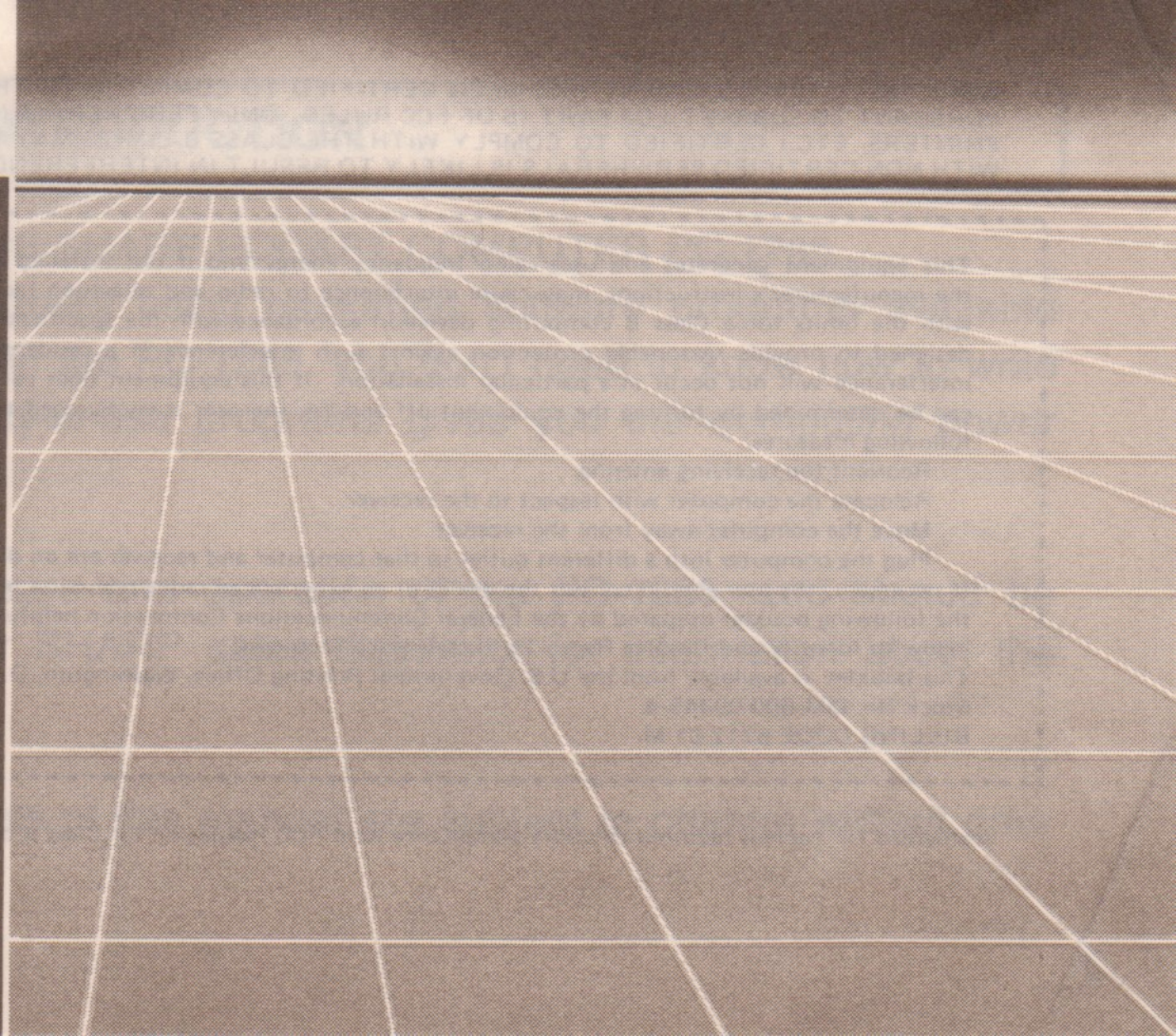
SHARP®

OPERATION MANUAL

POCKET COMPUTER

MODEL

PC-1285



WARNING: THIS EQUIPMENT HAS BEEN CERTIFIED TO COMPLY WITH THE LIMITS FOR A CLASS B COMPUTING DEVICE, PURSUANT TO SUBPART J OF PART 15 OF FCC RULES. ONLY PERIPHERALS (COMPUTER INPUT/OUTPUT DEVICES, TERMINALS, PRINTERS, ETC.) CERTIFIED TO COMPLY WITH THE CLASS B LIMITS MAY BE ATTACHED TO THIS COMPUTER. OPERATION WITH NON-CERTIFIED PERIPHERALS IS LIKELY TO RESULT IN INTERFERENCE TO RADIO AND TV RECEPTION.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna.
Relocate the computer with respect to the receiver.
Move the computer away from the receiver.
Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".
This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402.
Stock No. 004-000-00345-4
BILLING CODE 6712-01-M

A shielded I/F cable is required to insure compliance with FCC regulation for Class B computing equipments.

INTRODUCTION

THANK YOU FOR PURCHASING THE SHARP POCKET COMPUTER PC-1285.
The PC-1285 offers computing capability using packaged software programs available from distributors. This means that with the PC-1285, you don't need to know how to write programs. Instead, a choice of easy-to-use programs gives you the computing power to tackle numerous calculating tasks.

This manual is your guide to the care and operation of the PC-1285, and should be carefully read. Be sure to ask your SHARP sales distributor for information about the optional software programs.

For product improvement, the contents of this manual are subject to change without prior notice.

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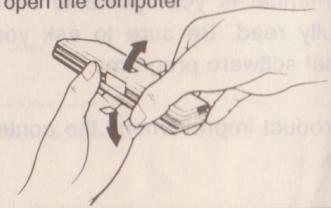
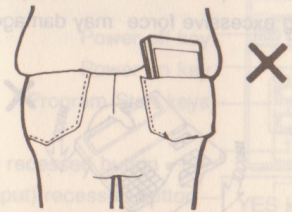
How to open the computer



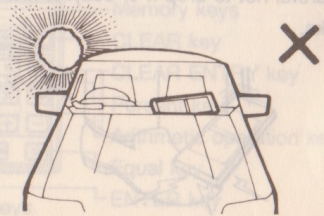
A FEW PRECAUTIONS

You can look forward to many years of service from your new PC-1285 if you follow a few simple precautions.

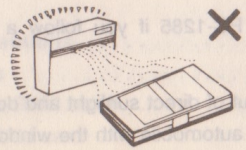
- Do not put it in your back pocket. Too much pressure can bend or break the device.



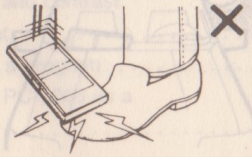
- Keep it out of direct sunlight and do not leave it in your automobile with the windows rolled up on a hot day.



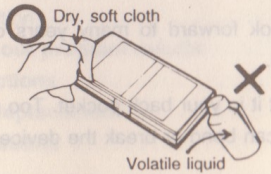
●Do not place it near an oven, heater, or other heat sources.



●Be careful not to drop it or subject it to shocks.

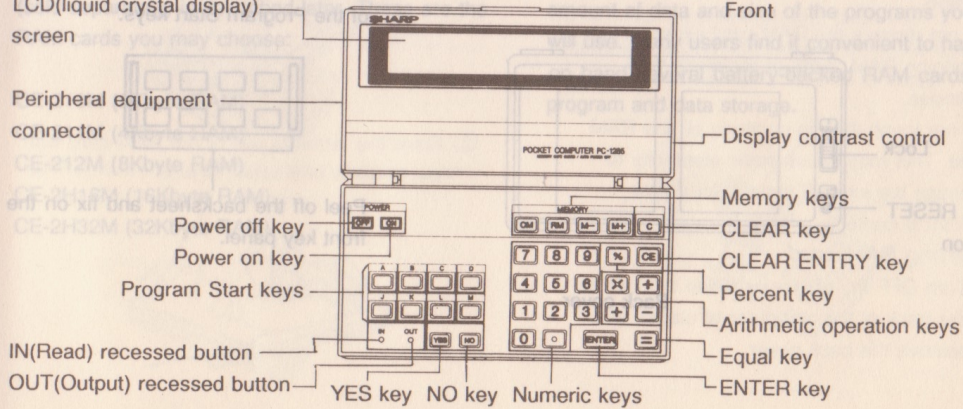


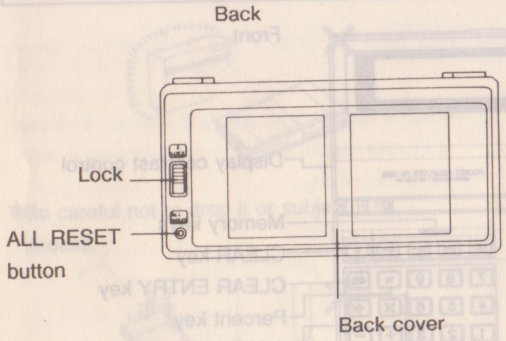
●Clean it with a dry, soft cloth. Do not use volatile liquids such as thinner or benzene.



●Do not force open or bend the computer. Applying excessive force may damage the hinges.

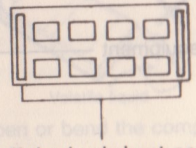
PART NAMES





Template

This plastic sheet fits over the keys and is used to identify the functions of the Program Start keys.



Peel off the backsheet and fix on the front key panel.

Use of RAM card

The PC-1285 must have a RAM card installed before it can be used. Insertion of the RAM card (sold separately) is described later. These are the RAM cards you may choose:

CE-210M (2Kbyte RAM)
CE-211M (4Kbyte RAM)
CE-212M (8Kbyte RAM)
CE-2H16M (16Kbyte RAM)
CE-2H32M (32Kbyte RAM)

- Kbyte (kilobyte) is the unit used to describe the capacity of the memory. Choose the RAM card size you need based on the expected amount of data and size of the programs you will use. Many users find it convenient to have on hand several battery-backed RAM cards for program and data storage.

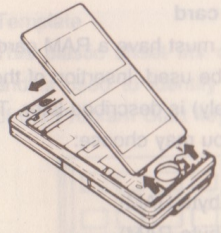
HOW TO USE RAM CARD

Caution

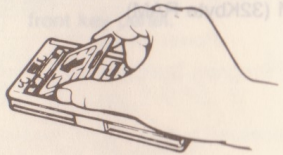
- Do not remove the RAM card except when changing RAM cards or replacing the batteries.
- Do not touch the pin contacts on the RAM card. This may cause static electricity to damage the internal circuitry or impair electrical contact.

Inserting RAM card

① Turn OFF the computer. Slide the lock on the back of the computer to unlock and remove the back cover.

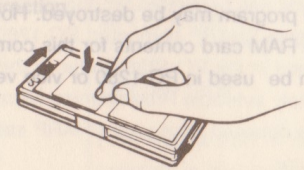


② Insert the terminal end of the RAM card with the terminal end facing down.



③ Gently press the RAM card until it snaps into place.

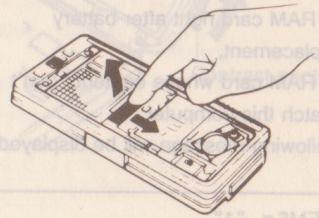
④ Replace the back cover and slide the Lock back to the LOCK position.



Changing RAM card

Refer to "Inserting RAM card" for replacing the different RAM cards.

To remove the inserted card, push the mounting/removal latch as shown in the figure. Keep the removed RAM card in its case.



More on RAM card

(1) When the RAM card is not properly installed, * will appear on the right of the display. If this happen, turn the power off and install the card again.

(2) When the power is turned on after installing:

① A new RAM card,

② A RAM card right after battery replacement,

③ A RAM card whose contents don't match this computer,

the following message will be displayed.

```
MEM$ =  "1"
RAM CARD CLEAR O.K. ?
```

- For ① and ②, if you press the [YES] key the RAM card will be initialized and will be ready for use with this computer.
- For ③, press the [YES] key to clear the contents and initialize the RAM card for use with this computer. To save the RAM card contents, turn the power off and remove the RAM card.

(3) If a RAM card, containing a program for this computer is used in a different computer, the program may be destroyed. However, the RAM card contents for this computer can be used in PC-1280 or vice versa.

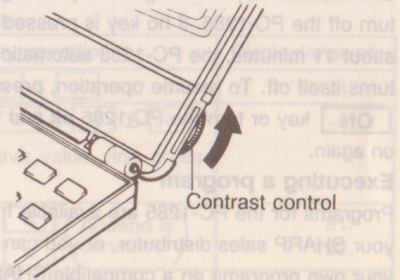
OPERATING YOUR PC-1285

Power on and contrast adjustment

Press the [ON] key to turn the power on, "0." will be displayed.

(Refer to page 10 when "*" is displayed.)

Adjust the display contrast by moving the contrast control dial. The contrast increases in the direction of the arrow and decreases in the opposite direction.



Automatic power off protection

To extend the battery life, the AUTO POWER OFF function is your safeguard if you forget to turn off the PC-1285. If no key is pressed for about 11 minutes, the PC-1285 automatically turns itself off. To resume operation, press the [ON] key or turn the PC-1285 off and then on again.

Executing a program

Programs for the PC-1285 are available from your SHARP sales distributor, or you can write your own programs on a compatible SHARP computer.

To use a prepared program, follow the instructions that came with the program. The program is executed using one of the assignable Program Start keys. Press the assigned key to start running the program.

Press the [ON] key when you want to stop the program.

Writing your own programs

Programs can be written on one of the compatible SHARP computer, PC-1280 and then used in the PC-1285. Refer to the separately available Programming Manual which may be obtained from your SHARP sales distributor.

Using the PC-1285 as a calculator

The PC-1285 also operates as a versatile calculator with a wide range of functions. In the following, each operation is shown, along with an example, the key sequences, and the resulting display. First, press the [ON] key when using the PC-1285 as a calculator.

	Example	Key operation	Display(answer)
Addition/ subtraction/ multiplication/ division	$12 \times 3 + 5 = 41$	12 [×] 3 [+] 5 [=]	41.
	$(-24) \div 4 - 2 = -8$	[C] [−] 24 [÷] 4 [−] 2 [=]	−8.
	(When the calculation starts with a negative value, first press the [C] and [−] keys.)		
Constant calculation	$34 + 57 = 91$ $45 + 57 = 102$	34 [+] 57 [=] 45 [=] (Addend is constant)	91. 102.
	$68 \times 25 = 1700$ $68 \times 40 = 2720$	68 [×] 25 [=] 40 [=] (Multiplicand is constant)	1,700. 2,720.
	(The subtrahend is constant in subtraction and the divisor is constant in division.)		

Example		Key operation	Display(answer)
Correction	$12+\underline{14}\rightarrow 12+\underline{34}=$	12 [+] 14 [CE] 34 [=]	46.
	$7\underline{\times}\rightarrow 7\underline{\div}4=$	7 [×] [÷] 4 [=]	1.75
Power calculation	$(4^3)^2=4^6=4096$	4 [×] [=] [=] (4^3) [×] [=] (64^2)	64. 4,096.
Fraction	$\frac{1}{8}=0.125$	8 [÷] [=]	0.125
Memory calculation	Totaling 25× 5 = 125 −) 84÷ 3 = 28 +) 68+17 = 85 Total 182	Deletes the memory contents before calculation [CM] 25 [×] 5 [M+] 84 [÷] 3 [M−] 68 [+] 17 [M+] [RM]	M 125. M 28. M 85. M 182.
	Temporary storing $(52-35)\div(14-3\times 2)=2.125$	[CM] 14 [M+] 3 [×] 2 [M−] 52 [−] 35 [÷] [RM] [=]	M 6. M 2.125

Example		Key operation	Display(answer)
Percent calculation	What is 10% of 200 ?	200 [×] 10 [%]	20.
	What percentage of 36 is 9?	9 [÷] 36 [%]	25.
Percent increase/ decrease/ calculation	What is a 10% increase from 200 ?	200 [+] 10 [%]	220.
	What is a 20% decrease from 500 ?	500 [−] 20 [%]	400.

Error messages

There are several situations that will cause an error condition ("E" will appear on the right top corner of the display). If this happen, press the [C] key to clear the error.

①When the integer part of a result exceeds 12 digits.
(Ex. 1234567890 [×] 1000 [=])

②When any number is divided by zero.
(Ex. 5 [÷] 0 [=])

③When the integer part of the memory exceeds 12 digits.
(Ex. [CM] 999999999999 [M+] 1 [M+])

When an error occurs during program execution, the following message will be displayed.

ERROR X

or

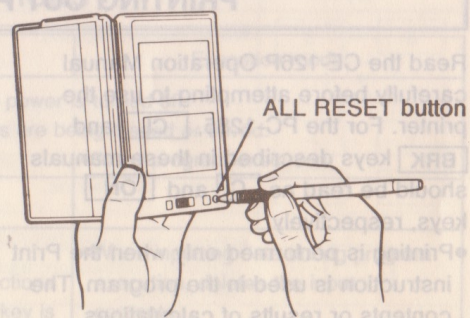
ERROR X IN XX

(X and XX represent numeric values.)

Press the [C] key to clear the error.

Malfunction

Press the ALL RESET button on the back of the computer if an abnormal condition occurs in which no keys, including the [ON] and [OFF] keys, respond. (The program will not be cleared.) If this abnormal condition occurs again or the program is not executed, reenter the program.



Use a ball-point pen or similar object to press the recessed buttons. Avoid using a sharp, pointed object that could break off.

PRINTING OUT PROGRAM RESULTS

Read the CE-126P Operation Manual carefully before attempting to use the printer. For the PC-1285, [CL] and [BRK] keys described in these manuals should be read as [C] and [ON] keys, respectively.

- Printing is performed only when the Print instruction is used in the program. The contents or results of calculations performed in Calculation mode cannot be printed out, nor can a program itself be printed out.
- When the print instruction is being executed, nothing shows on the display.

KEY FUNCTIONS

Key	Calculator mode	Execution mode
[ON]	•To turn on the power when the power is turned off. •Stops execution when programs are being loaded or saved.	•Stops program execution.
[OFF]	•Turn off the power.	
[C]	•When pressed twice, deletes numerics and calculation instructions except memory contents. This key is used before starting or restarting calculation. •Clears errors.	•When inputting data during program execution, deletes the input contents. •Clears errors.
[CE]	•Deletes the input value; use this key for correction.	•When inputting data during program execution, deletes the input contents.

Key	Calculator mode	Execution mode
0 ~ 9 •	•Input numeric values.	•Input numeric data in the data input wait state.
+ − × ÷	•Use these keys for addition, subtraction, multiplication, and division calculations.	•In the data input wait state, the following symbols can be input. + →+ − →− × →* ÷ →/
=	•Obtains the calculation result for addition, subtraction, multiplication and division.	•No operation
%	•Calculates percentages.	•In the data input wait state, the percent (%) symbol can be input.
CM	•Erases the memory contents.	•No operation
RM	•Displays the memory contents.	•No operation

Key	Calculator mode	Execution mode
M−	•Subtracts the input value or the result of the calculation from the value of the memory contents.	•No operation
M+	•Adds the input value or the result of the calculation to the value of the memory contents.	•No operation
A ~ D J ~ M	•Executes the program assigned to the key.	
ENTER	•Restarts the program when it has been interrupted to display the execution result.	
YES NO	•No operation	•Used for program execution. The use differs depending on the program being executed.

Key	Calculator mode	Execution mode
IN ◎ OUT ◎	•Used to input/output the program.	•No operation

Use a ball-point pen or similar object to press these recessed buttons. Avoid using a sharp, pointed object that could break off.

•Display symbols

The following symbols are displayed in the upper portion of the display.

BUSY :Indicates that the program is being executed.

DEG :Degree [°]

RAD :Radian [rad]

GRAD :Gradient[g]

(These symbols represent the units of angle used in trigonometric functions or reverse trigonometric function, $90^\circ = \frac{\pi}{2}$ [rad] = 100g)

E :Indicates an error has occurred.

M :Indicates that numeric values other than 0 are stored in the memory used for ordinary calculations.

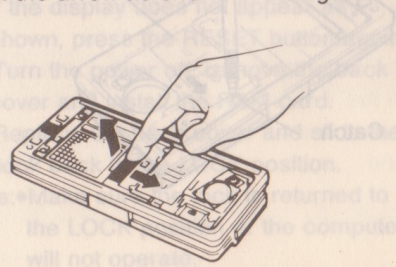
BATT :Indicates that the operating batteries are low and should be replaced as soon as possible.

BATTERY REPLACEMENT

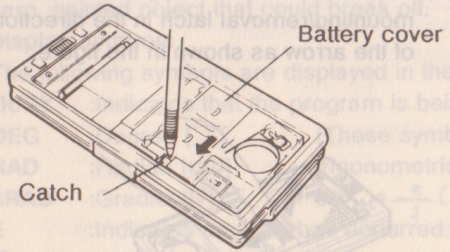
Battery Life

When the **BATT** symbol appears on the right top corner of the display, this indicates that the operating batteries are low, replace them as soon as possible. If used the computer when the **BATT** symbol appears on the display, the power may be turned off. Replace the batteries as follows:

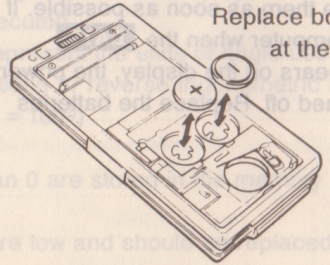
1) Turn OFF the computer.
2) Slide the lock on the back of the computer and remove the back cover.
3) Remove the RAM card, pull the card mounting/removal latch in the direction of the arrow as shown in the figure.



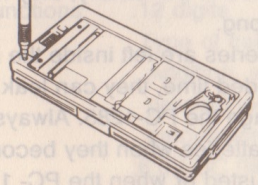
4) To remove the battery cover, gently press down on the catch and slide cover in the indicated direction.



5) Take out the used batteries and replace with two fresh lithium batteries.
Make sure the new batteries are first cleaned with a dry cloth and are then inserted with correct polarity.
Use two new lithium batteries (CR2032).

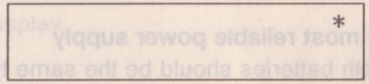


6) Replace the battery cover in a similar way to removal in step 4).
7) Press the RESET button on the back with a pointed object such as ball-point pen.



8) Replace the back cover and slide the lock back to the LOCK position.

9) Make sure that the following is displayed when you turn the power on by pressing the ON key.



If the display does not appear as shown, press the RESET button again.
10) Turn the power off, remove the back cover and install the RAM card.
11) Replace the back cover and slide the lock back to the LOCK position.

Note: •Make sure the lock is returned to the LOCK position or the computer will not operate.

•If the batteries are replaced while the RAM card is installed, the entire RAM contents may be lost.

For most reliable power supply

•Both batteries should be the same type.
•When replacing the batteries, always change both at the same time.
•Correctly insert the batteries by referring to the + and - marks on the battery.
•Never use an old battery with a new one.

Battery cautions

•Keep the batteries in a safe place and out of reach of children.
•Normal battery life is about 120 hours of use. Because the original batteries were installed in the factory, they may not last that long.
•If batteries are left inside the unit for an extended time, they can leak and damage the PC-1285. Always remove the batteries when they become exhausted or when the PC- 1285 is to be stored.
•Old batteries should not be incinerated due to risk of explosion.

SPECIFICATIONS

Model	:PC-1285
Display	:2-line 24-digit liquid crystal display.
CPU	:CMOS 8-bit CPU
Calculator functions	:12 digits Type of calculations: Addition, subtraction, multiplication, division, constant, percent, percent increase, percent decrease, powers, fractions, memory calculation, etc.
Power	:6.0V DC (lithium battery)(CR2032×2)
Power consumption	:0.03W
Battery life	:Continuous operation in normal circumstances: About 120 hours (with CE-212M) (based on 10 minutes of operation or program execution and 50 minutes of display per hour, at an ambient temperature of 20

Operating temperature	:0℃～40℃(32° F～104° F)
Dimensions	:135(W)×70.5(D)×19.2(H)mm(closed)
	5-5/16"(W)×2-13/16"(D)×3 /4"(H)
	135(W)×141(D)×9.6(H)mm(open)
	5-5/16"(W)×5-11/16"(D)×3 /8"(H)
Weight	:Approximately (with batteries)175g(0.39lb.)
Accessories	:Template, two lithium batteries (provided in the unit), operation manual

MODEL PC-1285 AND PERIPHERALS
LIMITED WARRANTY

Sharp Electronics Corporation warrants each of these products to the first consumer purchaser to be free from defective materials and workmanship. Under this warranty the product will be repaired or replaced, at our option, without charge for parts or labor, with the exception of supplies, such as batteries, ribbons, inked rollers, etc., when returned to a SHARP FACTORY SERVICE CENTER listed in the instruction booklet supplied with your product.

This warranty does not apply to cassette tapes, software programs or appearance items nor to any product whose exterior has been damaged or defaced, nor to any product subjected to misuse, abnormal service or handling, nor to any product altered or repaired by other than a SHARP FACTORY SERVICE CENTER. This warranty does not apply to any product purchased outside the United States, its territories or possessions.

The period of the warranty shall be ninety (90) days on parts and labor from the date of the original purchase.

This warranty entitles the first consumer purchaser to have the warrantied parts and labor rendered at no cost for the period of the warranty described above when the unit is carried or shipped prepaid to a SHARP FACTORY SERVICE CENTER together with proof of purchase.

THIS SHALL BE THE EXCLUSIVE WRITTEN WARRANTY OF THE FIRST CONSUMER PURCHASER AND NEITHER THIS WARRANTY NOR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED SHALL EXTEND BEYOND THE PERIOD OF TIME LISTED ABOVE. IN NO EVENT SHALL SHARP BE LIABLE FOR CONSEQUENTIAL ECONOMIC DAMAGE OR CONSEQUENTIAL DAMAGE TO PROPERTY. SOME STATES DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR AN EXCLUSION OF CONSEQUENTIAL DAMAGE, SO THE ABOVE LIMITATION AND EXCLUSION MAY NOT APPLY TO YOU. IN ADDITION, THIS WARRANTY GIVES SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

FOR YOUR RECORDS....

For your assistance in reporting this electronic calculator in case of loss or theft, please record below the model number and serial number which are located on the bottom of the unit.
Please retain this information

Model Number _____ Serial Number _____

Date of Purchase _____ Place of Purchase _____

SERVICE CENTER ADDRESS

SHARP ELECTRONICS CORPORATION
Sharp Plaza
Mahwah, New Jersey 07430-2135
Phone: (201) 529-9257

SHARP ELECTRONICS CORPORATION
725 Old Norcross Road
Lawrenceville, GA 30245
Phone: (404) 995-0717

SHARP ELECTRONICS CORPORATION
1300 Naperville Drive
Remeoville, Illinois 60441
Phone: (312) 759-8555

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